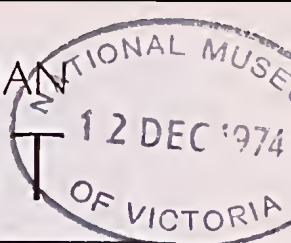


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SOME ABORIGINAL STONE ARRANGEMENTS, SECURE BAY REGION, KIMBERLEY DIVISION, WESTERN AUSTRALIA.

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ABSTRACT

Aboriginal stone arrangements, believed to be of some antiquity, were found at three separate sites in the Secure Bay region of the Kimberley District. The arrangements are attributed to ancestors of a seafaring branch of the now disbanded Wororra people. One site with a circle of stones and a number of abstract arrangements possibly represents an increase site for yams. The other two sites each depict a reptilian figure. The serpent-like arrangement at one of them may be attributed to a diffusion of a southern Kimberley mythology and possibly represents the rainbow serpent "Galaru." The arrangement at the other site is a goanna-like figure portrayed without legs and tail. Recorded mythology from the adjacent Ungarinyn tribe suggests that the figure represents "Yedara", a goanna which became a piece of stone after being dismembered by a grasshopper.

The sites were probably used by the Wororra people for secret rites and totemic increase ceremonies which formed part of their cultural and ceremonial life.

INTRODUCTION

Some aboriginal stone arrangements were located at three separate sites in the Secure Bay region of the West Kimberley coast of Western Australia. The arrangements were spotted from the air in 1966 whilst conducting geological traverses by helicopter on the Yampi 1:250,000 Sheet area (Sofoulis *et al.*, 1971). Subsequent traverses in the same area during 1967 afforded an opportunity for recording the arrangements.

The three sites lie within the territorial ground previously occupied by the now disbanded Wororra† people. One of the sites includes a circle of stones with a number of associated abstract arrangements. The other sites each depict enlarged naturalistic representations of different reptilian figures.

Other sites probably exist within the area. Elkin (1933b) has recorded some stone arrangements, including symbolic shapes and heaps or cairns of token stones, from sites near the head of the adjacent Walcott Inlet (Ungarinyn country). Heaps of token stones as well as Wororra art galleries (commonly featuring the mouthless Wondjina figures) were first recorded from the Glenelg River area by Grey (1841). Some Wororra rock paintings of this region and their mythological interpretation were subsequently described by Love (1930). The "Ungoodju Stone", a natural megalith of phallic aspect, and once revered by the Wororra, is illustrated by Idriess (1964, p. 137).

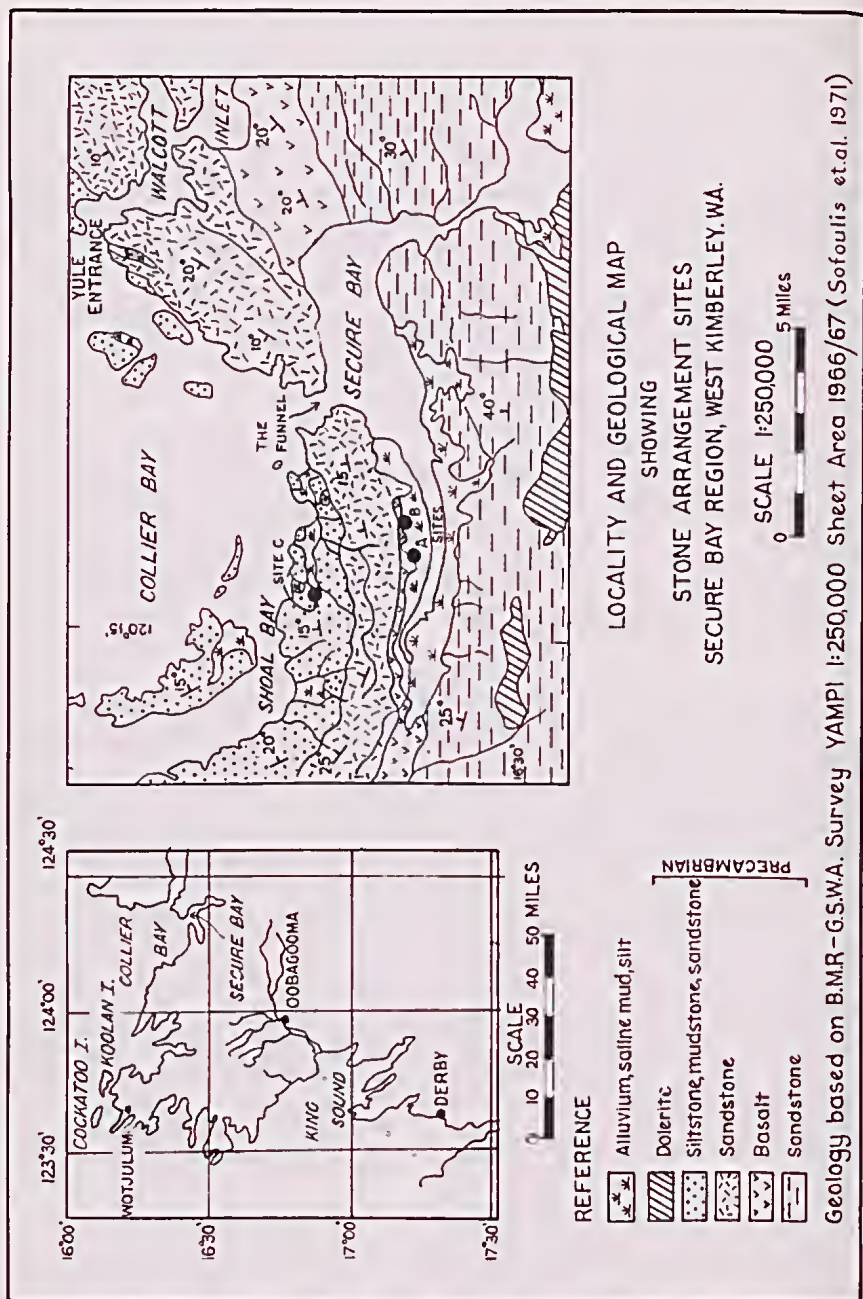
The area is now uninhabited. With the abandonment of the Port George IV, Kunmunya (Kwinana), Munja, Wotjulum and Sunday Island Missions, and transfer of indigenous tribes to more southern areas, the ancient cultural practices of the various communities have either been curtailed, abandoned or superseded, and the few remaining survivors no longer inhabit or visit their ancestral grounds.

LOCATION

The sites of the stone arrangements are shown on Plate 1, which is also a geological map of the area. The three sites are found as isolated mudflats flanking a rugged rocky peninsula that forms the western arm

* Elkin (1933b) incorrectly refers to it as an "iguana" in his paper.

† Wororra, also spelt Wurara, Worrora, Worora.



of The Tunnel entrance to Secure Bay. Shoal Bay and Collier Bay lie to the north of the peninsula and a large tidal estuary, constituting the western extension to Secure Bay lies to the south. Fresh water is obtainable from the creek that drains into the upper reaches of the tidal estuary.

Coastal and estuarine sectors adjacent to the stone arrangement sites are accessible from the sea. Conventional access from the southern mainland areas is prevented by the high escarpments and rugged sandstone terrains of the McLarty and High Ranges.

The nearest permanent settlements are those of the iron ore producing centres at Yampi Sound (Koolan Island and Coekatoo Island) to the northwest, and Oobagooma homestead, a cattle station situated to the southwest near the upper tidal reaches of the Robinson River.

TRIBAL GROUNDS

Elkin (1933b) placed the area within the tribal boundaries of the Wororra people, a mainland tribe with territorial grounds that extended inland and along the coast south from the Prince Regent River to King Sound. The adjoining country east of Walcott Inlet belonged to the Ungarinyin people, whilst that to the south was formerly Ungumi (or Ungami) territory (Capell, 1939). Plate 2 (after Tindale, 1940) shows the pre-existing tribal areas.

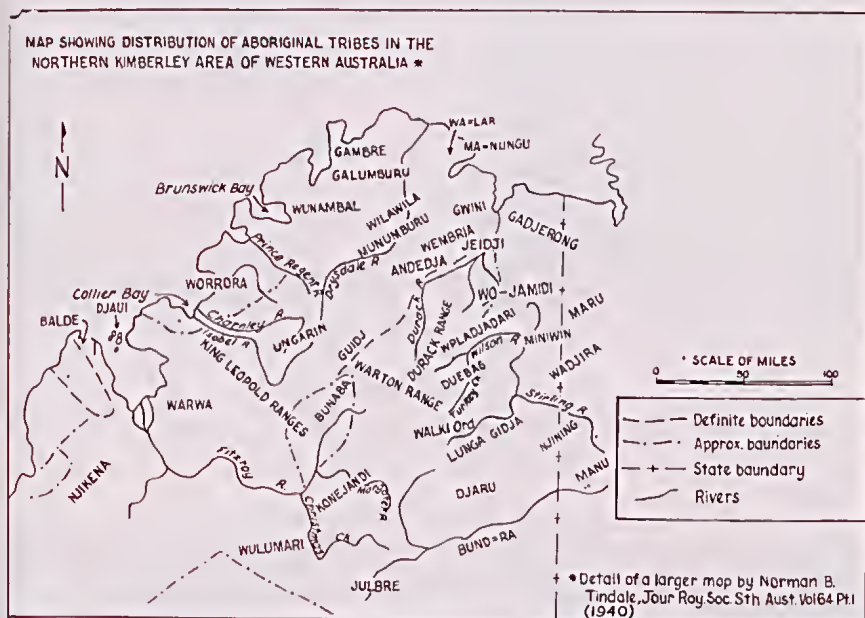


Plate 2.

A seafaring branch of the Wororra previously centred on Augustus Island, was described by Love (1917) as having used detachable double-decked rafts (called "Kahlua"* in Wororra) for travelling between islands and coastal mainland parts in search of food (principally fish, turtle, dugong, etc.). In view of the general inaccessibility of the mainland areas adjacent to Secure Bay, it is reasonable to attribute the stone arrangements to ancestors of this seafaring branch.

SITES

Isolated dry mudflats devoid of vegetation provide the natural surfaces on which the stones are arranged. These and other mudflats of smaller or larger dimensions constitute silted areas bordering the landward fringes of mangrove-forested tidal estuaries, marshes and sheltered bays. They consist of a heavy textured saline clay which dries out superficially to give a firm, grey, puffy, salt-impregnated surface commonly

* Kahlua: A detachable double-decked raft generally constructed of mangrove logs. For details and use, see Love (1917) and Campbell and Bird (1915). Use of this craft extended from King Sound to Prince Regent. The Wunambal (or Unambal) tribe north of the Prince Regent used the dug-out canoe "Palumbi", which was possibly of Melanesian influence.

coated with white crystalline or powdery, salt encrustations, and sometimes marked with polygonal shrinkage cracks.

The stones arranged at the three sites are restricted to the emerged dry sections of the flats although it is likely that parts of them would be inundated periodically by king tides.

MATERIALS USED

The stones used in the arrangements were collected either *in situ* or from adjacent rock exposures. They consist of discrete natural-weathering slabs and subrounded boulders ranging from 4 to 30 inches long and 3 to 12 inches across, the majority being natural shed material between 8 and 16 inches long and 6 to 12 inches across.

The stones arranged on the south side of the peninsula (sites A and B) were collected from nearby exposures and consist of basaltic rock and sandstone. It is possible that the hard, fresh basalt from this area also provided the Wororra people with material for manufacturing the "lem-bulya" or stone tomahawk (illustrated in Love, 1917). The arrangement on the north side (site C) consists mainly of ferruginous glauconitic sandstone collected from nearby breakaway exposures, or shed from low rock platforms exposed on the mudflat floor, both of which provide a ready source of discrete stones.

Oxidised and iron stained mudstones and siltstones which overlie the glauconitic sandstone at this site crop out as massive rocks with little "shed" material and consequently were not used in the arrangement. However, gougings noted in the limonitic and ochreous varieties probably provided a source for some of the various coloured mineral pigments used in gallery paintings, artifacts adornment and body decoration.

STONE ARRANGEMENTS

The sites containing the stone arrangements are shown on Plate 1 as sites A, B, and C. The arrangements are:

Site A

The multiple arrangements at this site are shown in Figures 1 and 2. They include a closely-spaced circle of stones approximately 3 feet in diameter (Figure 1) and other associated abstract patterns of separated stones some of which clearly depict C or U-shaped symbols. (Figure 2). These latter shapes are similar to the U and J-like spaces enclosed by small stones and which Elkin (1933b) described as "sacred increase sites sanctified by mythology and related to food supply," the symbols in this instance being described by Elkin as representing the edible yam. Elkin (1933b) also records that the performances of the appropriate rites (usually referred to as "talu" rites) at such secret sites appeased the pre-existent spirit of the particular totem concerned and that such ceremonies performed at the appropriate season (usually just before the period when the totem species normally increase) ensured an increase of that species and so provided for the future food supply of the tribe.

Site B

This single arrangement consists of closely-spaced stones (Figures 3 and 4) which depict a serpent-like figure with recumbent head and possibly a recumbent or coiled tail although this portion appears diffuse and has possibly been disturbed by tidal inundation. The overall length of the figures excluding recumbent parts is approximately 80 feet. There are large upstanding stones near the mouth of the serpent, but their significance is not known.

It is possible that the figure represents "Galaru" the rainbow serpent who featured in the mythology of Southern Kimberley tribes and who was associated with the rain and sky (Elkin, 1938). The depiction of the serpent at this site may therefore represent an enoachment or a diffusion of more southern mythologies.



Fig. 1.—Multiple stone arrangements air view. Site A.



Fig. 2.—Close up view of U-shaped arrangements Site A.



Fig. 3.—Air view of Serpents Head. Site B.

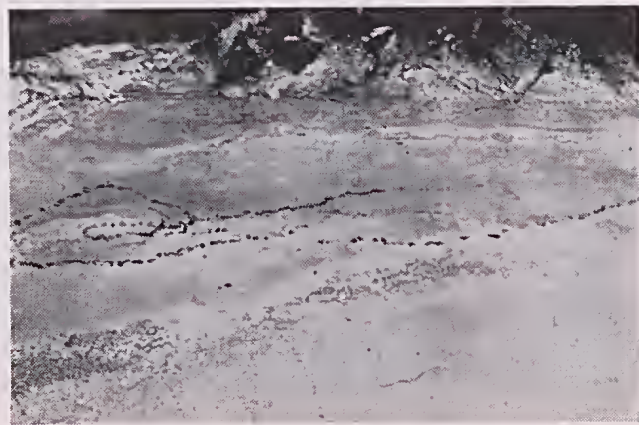


Fig. 4.—Air view of Serpent. Site B.

Site C

This single arrangement (Figure 5) is by far the most interesting since it is little disturbed and shows a closely-spaced arrangement which depicts the head and thorax of a reptilian figure. Neither legs nor tail are represented but from the diamond-shaped head and its inclination to the thorax, the arrangement strongly suggests a goanna.

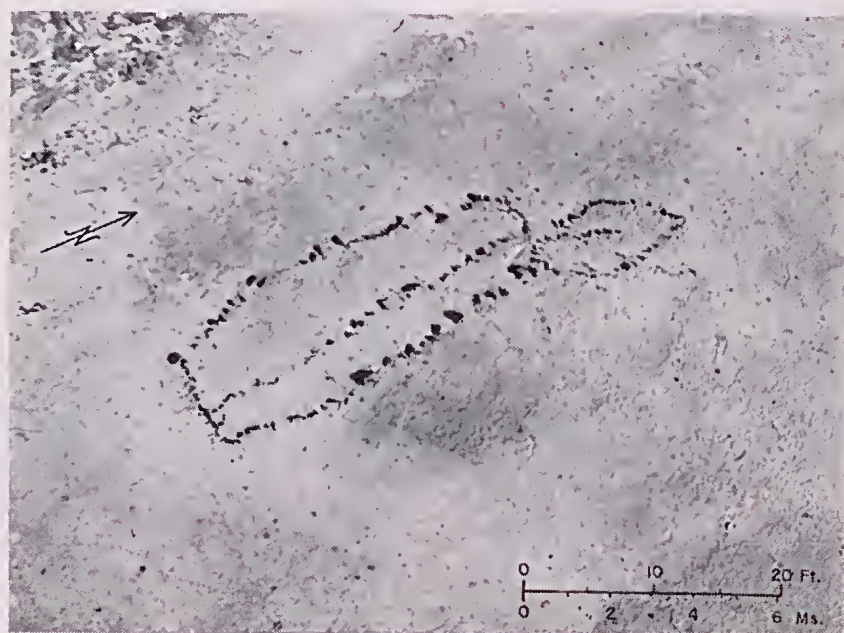


Fig. 5.—Air view of Site C.

The base of the thorax is 10 feet across whilst the overall length of the whole arrangement is approximately 53 feet. The thorax is separated into two unequal parts by a line of stones placed off-centre down its length. A further line of stones is arranged along the central part of the head's long axis, but there is no continuous link to the extremities.

Although the division of the thorax into two unequal parts could be attributed to the originator's lack of perspective or artistic ability this offsetting might have been intentional as when viewed from an appropriate distance on the eastern side, the dividing line gives the illusion of a medial lineament.

The subdivision of the head and thorax is possibly a crude form of X-ray art known by anthropologists to be confined to limited coastal areas of Northern Australia and attributed to a Melanesian influence. Non-representation of legs and tail sections could be explained by realistic representation being replaced by symbolism whereby a great representative of the totem may have left a permanent symbol at the site in the form of only part of his body.

There is also the possibility that the creator of the arrangement may have been unable to fully express what he attempted to portray. However, it seems more reasonable to believe that the omissions were deliberate and meaningful, and that the creator was deeply inspired by religious ideals and spiritual beliefs.

Since adjoining tribes commonly share descent from the same creator ancestors and have related mythologies, the abrupt rectangular

termination of the thorax and absence of limbs in the portrayed figure probably represents the cult hero referred to in a variation of the Ungarinyin mythology recorded by Elkin (1933b) where: "... a grasshopper, (dzani or terke) flew from Djaningari (an Ungarinyin horde country of which it is the totem) to Indalgam (a Wororra tambun), where he found an iguana named Yadara. He cut off the latter's hind legs and tail after which he (Yadara) became a piece of stone ..."

It is therefore suggested that the figure perpetuated in the stone arrangement commemorates the lizard, "Yadara", and that the site is indeed the Wororra territory or tambun previously known by the Wororra tribe as "Indalgam".

AGE AND SIGNIFICANCE OF ARRANGEMENTS

The arrangements are believed to be a reflection of Wororra culture and a link with their mythological and historical past. Since Aboriginal culture is a product of long development, it is therefore believed that the arrangements could be of some antiquity although it is almost impossible to suggest even approximate dates.

Most of the stones are partly embedded in the hard, dry mud floor and from their ferruginous coatings and general weathered appearance, they have probably lain in these positions for many generations. However, it is likely that periodic repositioning of some of the stones may have been required where these were disturbed by extreme tidal inundation.

The significance placed on the series of arrangements by the Wororra people would be similar to the anthropological findings from adjacent regions. That is the sites were probably of great importance in both ritual and ceremony, and that they may have formed part of a sanctified series, where novices admitted further into the secret tribal life were conducted, and where the appropriate ceremonies were performed, and the meaning of each arrangement and its association with the site and with that portion of tribal territory was carefully explained to them by the "elders."

In this way the sacred mythological and tribal history may have passed to succeeding generations, and as Elkin (1933a) has recorded, "the performance of such rites served to strengthen the moral and social sanctions of the tribe and ensured its preservation and persistence."

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SOME NOTES ON THE DECLINE AND SUBSEQUENT RECOVERY OF MAMMAL POPULATIONS IN THE SOUTH-WEST.

By D. H. PERRY, Victoria Park.

The very serious decline in numbers of the small marsupials inhabiting the south-west part of the State in the late 1930's has been referred to in past numbers of the *W. A. Naturalist*. Some valuable observations referring to this matter appear in 3 (5): 101-103; 4 (6): 125-141; and 8 (6): 150-151.

My own conclusions, based on observation and discussion with many interested people, indicates that there was a catastrophic collapse of populations of possums (both *Trichosurus vulpecula* and *Pseudocheirus peregrinus*), Woylies (*Bettongia penicillata*), Quokkas (*Setonix brachyurus*), and Tammars (*Macropus eugenii*) during the period 1938 to 1944. Prior to this these animals were quite common within their respective habitats. The Brush Wallaby (*Macropus irina*) did not appear to be so seriously affected and whilst numbers were reduced it has continued to inhabit all of its usual haunts and in recent years appears to be gaining in numbers.

Destruction of habitats and interference with the environment must have been important factors in this depletion but it seems logical to assume that the sudden drastic and widespread reduction in numbers could only be achieved by a disease striking populations completely susceptible or unresistant to it. Introduced foxes and feral cats would undoubtedly have had some effect in reducing the numbers of small marsupials but we have the situation where discrete populations have survived in spite of these predators and are now increasing despite their continuing presence. Good examples of this are the Ringtail and Brushtail Possums which by about 1945 had practically disappeared from the Jarrah and Marri forests of the south west.

In January 1973 on a journey from Perth to Albany by road I counted five dead Brushtail Possums and one Ringtail between Armadale and Williams. One can now find "possum trees" in many parts of our State forests, these are trees with well defined tracks of scratch marks in the bark, leading up to a hollow in which a Possum has made its home. These trees were a feature of our forests when I was a young man but they gradually disappeared until one could travel all day in our Jarrah forests and never see one. That they are becoming increasingly easy to find now is most heartening and encouraging.

Scattered populations of Woylies exist from Dryandra to Lake Muir down the eastern side of the Jarrah forest where it intermingles with Wandoo. This little animal has been able to maintain itself at Dryandra under Forest Department protection and now appears to be regaining a foothold in the forests to the south.

Quokkas occurred abundantly where a dense low cover of vegetation afforded them the protection they needed, mainly around swamps and along creek and river courses, from the valley of the Helena River eastwards to its junction with the Darkan, and south to the south coast. With the exception of a very few discrete groups these animals have vanished from this region. It was thought at one stage that they were actually extinct on the mainland but happily this has not proved to be the case. Hopefully these isolated groups will eventually succeed in restocking their old haunts.